

AMENDMENTS TO THE CLAIMS

Claims 84-135 are cancelled herein and Claims 136-154 are added, as shown below. A complete listing of the claims in this case, with their status, is shown below.

1-135. (Cancelled)

136. (New) A method comprising:

- (a) contacting a candidate compound with a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to SEQ ID NO:2, wherein said GPCR is present on a cell or isolated membrane thereof;
- (b) determining the ability of the compound to modulate said G protein-coupled receptor, and
- (c) determining if said compound has an activity that inhibits hypertrophy in the heart.

137. (New) The method of claim 136, wherein element (c) comprises:

- (i) contacting a compound which modulates the G protein-coupled receptor in (b) *in vitro* with a cardiomyocyte cell; and
- (ii) determining whether the compound modulates hypertrophy of the cardiomyocyte cell.

138. (New) The method of claim 137, wherein the method comprises measuring size of the cardiomyocyte cell or expression of atrial natriuretic factor (ANF) by the cardiomyocyte cell.

139. (New) The method of claim 136, wherein element (c) comprises:

- (i) administering a compound which modulates the G protein-coupled receptor in (b) to a mammal; and
- (ii) determining whether the compound modulates heart function in the

mammal.

140. (New) The method of claim 139, wherein the mammal is a rat, mouse or pig model of heart disease.

141. (New) The method of claim 139, wherein element (ii) comprises evaluating congestive heart failure, congestive cardiomyopathy, heart hypertrophy, left ventricular hypertrophy, right ventricular hypertrophy or hypertrophic cardiomyopathy.

142. (New) The method of claim 136, wherein the method comprises identifying an inverse agonist of the receptor.

143. (New) The method of claim 136, wherein the method comprises identifying an antagonist of the receptor.

144. (New) A method comprising:

(a) contacting a candidate compound *in vitro* with a plurality of cardiomyocyte cells comprising a G protein-coupled receptor that comprises an amino acid sequence having at least 95% identity to SEQ ID NO:2;

(b) determining the ability of the compound to reduce a level of expression of the G protein-coupled receptor in said plurality of cardiomyocyte cells; and

(c) determining if said compound has an activity that inhibits hypertrophy in the heart.

145. (New) The method of claim 144, wherein element (c) comprises:

(i) administering a compound which reduces a level of expression of the G protein-coupled receptor in said plurality of cardiomyocyte cells in (b) to a mammal; and

(ii) determining whether the compound modulates heart function in the mammal.

146. (New) A method comprising:
- (a) administering a candidate compound to a non-human mammal having a genome that is modified to provide for expression of a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to SEQ ID NO:2; and
  - (b) determining if said compound has an activity that inhibits hypertrophy in the heart.
147. (New) The method of claim 146, wherein said genome is modified to provide for selective expression of the G protein-coupled receptor in cardiomyocytes.
148. (New) A cultured cardiomyocyte cell comprising a recombinant nucleic acid encoding a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity to SEQ ID NO:2.
149. (New) A non-human mammal having a genome that is modified to provide for selective expression of a G protein-coupled receptor comprising an amino acid sequence having at least 95% identity of SEQ ID NO:2 in cardiomyocytes.
150. (New) A non-human mammal having a genome that is modified to provide for selective inactivation of a mammalian RUP40 gene in cardiomyocytes.
151. (New) A method of treating or preventing a heart disease selected from heart hypertrophy, left ventricular hypertrophy, right ventricular hypertrophy and hypertrophic cardiomyopathy, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 G protein-coupled receptor or of a pharmaceutical composition comprising the inverse agonist or antagonist and a pharmaceutically acceptable carrier.

152. (New) A method of inhibiting cardiomyocyte hypertrophy, comprising administering to a mammal in need thereof a therapeutically effective amount of an inverse agonist or antagonist of the mammalian RUP40 G protein-coupled receptor or of a pharmaceutical composition comprising the inverse agonist or antagonist and a pharmaceutically acceptable carrier.

153. (New) The method of claim 152, wherein the method inhibits cardiomyocyte hypertrophy in congestive heart failure or congestive cardiomyopathy.

154. (New) The method of claim 152, wherein the method inhibits cardiomyocyte hypertrophy in post-myocardial infarction remodeling.